



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,767	11/21/2003	Thomas M. Fredericks	WEN/272/IUS	1456
2543	7590	10/17/2005	EXAMINER	
ALIX YALE & RISTAS LLP 750 MAIN STREET SUITE 1400 HARTFORD, CT 06103			ZEADE, BERTRAND	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/718,767	FREDERICKS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Bertrand Zeade	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 21 November 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 05/19/04; 08/02/04
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 8-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Turnbull et al. (U.S.6,523,976).

Regarding claim 8 Turnbull discloses as shown in (figs. 1, 21) of Turnbull at least one PC board;

- a plurality of LEDs (14, fig.1) of Turnbull, mounted to said PC board, said plurality of LEDs comprising cyan LEDs and amber LEDs as shown in (fig. 16) of Turnbull;
- a circuit as shown in (fig. 21) of Turnbull for simultaneously energizing said plurality of LEDs, wherein said plurality of LEDs are selected to produce a composite light when energized, said composite light having a chromaticity center of tolerance of approximately X=0.418 and Y=0.397, the composite light having a white hue as shown in (fig. 7) as shown in (fig. 7) of Turnbull.

Regarding claim 9 as shown in (fig. 16) of Turnbull, each said LED has an average radiometric power and said LEDs are selected so that the radiometric power of

Art Unit: 2875

said amber LEDs is approximately three times the radiometric power (col. 17, line 62-67) of the cyan LEDs.

Regarding claim 10 as shown in (fig. 16) of Turnbull, each said LED radiates a luminous flux when energized, and said LEDs are selected so that the luminous flux produced by said amber LEDs is approximately three times the luminous flux produced by said cyan LEDs.

Regarding claim 11, two amber LEDs for each cyan LED (see fig. 16) as shown in (fig. 16) of Turnbull.

Regarding claim 12 as shown in (figs. 1-2) of Turnbull, first and second substantially planar polygonal PC boards, said PC boards having an top surface and a bottom surface and substantially straight edges, said plurality of LEDs mounted to said top surface, wherein said PC boards are fixed with an edge of said first PC board aligned with and adjacent to an edge of said second PC board, said PC boards defining an included to angle of 90°.

Regarding claim 13 as shown in (figs. 1-2, 16) of Turnbull, the plurality of LEDs mounted to the first PC board is substantially identical to the plurality of LEDs mounted to said second PC board.

Regarding claim 14, as shown in (figs. 1-2, 16) of Turnbull, the plurality of LEDs mounted to the first PC board is substantially identical to the plurality of LEDs mounted to said second PC board and consists essentially of two amber LEDs and one cyan LED of substantially equivalent size and power requirements.

Regarding claim 15, as shown in (figs. 1-2, 16) of Turnbull, the at least one PC board comprises a plurality of thermally transmissive substantially planar PC boards and said position light comprises: a thermally conductive support for said PC boards, said support having a substantially planar surface for each of said PC boards, said planar surfaces adjoining along one edge to define an included angle between said planar surfaces.

3. Regarding claim 16 as shown in (fig. 16) of Turnbull, the LEDs have a viewing angle and said viewing angle and said included angle result in a light radiation pattern from the position light extending over an arc of 140° in a horizontal plane bisecting said

Regarding claim 17 Turnbull discloses an LED assembly having:

- a plurality of LEDs (14, fig. 1) each having a dominant wavelength below 600nm (see fig. 3/4A);
- an electrical circuit (21) for generating current to energize said LEDs to produce a composite light, wherein said LEDs comprising said plurality of LEDs are selected to so that said composite light has an aviation white chromaticity (col. 1, lines 15-20).

Regarding claim 18 as shown in (fig. 3), the plurality of LEDs consists essentially of amber LEDs and cyan LEDs in the ratio of two amber LEDs for every one cyan LED.

Regarding claim 19 as shown in (figs. 3, 16), the plurality of LEDs include amber LEDs having a dominant wavelength of approximately 590nm and cyan LEDs having a dominant wavelength of approximately 492nm.

Regarding claim 20 as shown in (fig. 16), the amber LEDs and said cyan LEDs are selected so that the radiometric power inherent of said amber LEDs is approximately three times the radiometric power of said cyan LEDs.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konicke et al. (U.S.6,669,357) in view of Turnbull et al. (6,523,976).

Konicke et al. disclose an illumination system of an aircraft and like vehicles having:

Regarding claim 1, a support;

a plurality of LEDs (27, 28,30) mounted to the support (22, fig. 2);

- a circuit or block diagram (see fig. 1) for energizing the LEDs, wherein

said LEDs produce a composite light when energized, the composite light appearing white but including little (col. 1, lines 25–29).

Regarding claim 2, the support (22, figs. 2, 4) comprises two substantially planar surfaces adjacent to each other along one edge, the surfaces defining an angle of approximately 90° between them.

Regarding claim 3, the support (22, fig. fig. 4) is bisected by a plane and is substantially symmetrical on either side of said plane (20, fig. 4). The support (22) comprising a substantially planar surface adjacent either side of the plane said support surfaces defining an angle of approximately 90° between them, said angle being bisected by said plane (20, fig. 4).

Konicke et al. does not disclose a cyan LED as applied to claim 1 above. However, Turnbull et al. discloses as shown in (fig. 16) an LED assembly having: theLEDs consisting essentially of cyan LEDs and amber LEDs, said LEDs selected to produce light flux in a ratio of approximately three amber flux units for every one cyan flux unit.

Regarding claim 4, a plurality of PC boards (col. 12, 15-20), each PC board including a plurality of LEDs in the ratio of two amber LEDs for every one cyan LED (as shown in (fig. 21).

Regarding claim 5, as shown in (figs. 3 and 4A) of Turnbull, the cyan LEDs produce light having a dominant wavelength of approximately 492nm and the amber LEDs produce light having a dominant wavelength of approximately 590nm.

Regarding claim 6 as shown in (figs. 1-2, 16) of Turnbull, each said LED has an optical axis, the position light comprising two thermally transmissive, substantially planar PC boards, a plurality of said LEDs mounted to each said PC board in the ratio of two amber LEDs to each cyan LED, the optical axes of the LEDs mounted to each said PC board are substantially parallel, and the PC boards are mounted to said support (12, fig. 16) to define an included angle of 90° between said PC boards.

Regarding claim 7 as shown in (fig. 16 and 3) of Turnbull, the composite light is visible at an intensity of at least 20 candela over an arc of 140° in a horizontal plane, said arc centered on a line bisecting said included angle.

It would have been obvious to one of the ordinary skill in the art at the time invention was made to use the illumination system of an aircraft of Konicke et al. with the cyan LED taught by Turnbull et al., since Turnbull et al. would provide

Konicke et al. with the LED assembly having a high efficiency illuminator assembly, for use in limited power applications, projecting effective white illumination, and having a plurality of LEDs of two types whose visible emission when energized have hues which are complementary to one another. position light.

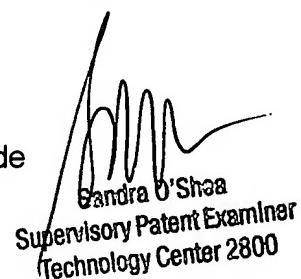
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bertrand Zeade whose telephone number is 571-272-2387. The examiner can normally be reached on 9:30 AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bertrand Zeade  
Examiner



Sandra O'Shea  
Supervisory Patent Examiner  
Technology Center 2800